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Babingtonia peteriana (Myrtaceae: Chamelaucieae), an ornate novelty from south-western Australia

Barbara L. Rye

Western Australian Herbarium, Biodiversity and Conservation Science,
Department of Biodiversity, Conservation and Attractions,
Locked Bag 104, Bentley Delivery Centre, Western Australia 6983
Email: Barbara.Rye@dbca.wa.gov.au

SHORT COMMUNICATION

The new species of Myrtaceae tribe Chamelaucieae DC. that is described below is very distinctive, having a mass of long projections on the outside of its flowers and densely papillose-warty stems. It was discovered in October 1952 by Charles Gardner, who assigned the manuscript name *Baeckea moschata* C.A.Gardner to his collection and made five sketches of the highly ornate flowers (on PERTH 06796532). However, overwhelmed by the large number of unnamed species known at that time, Gardner never formally published this species, which later became known as *B.* sp. Three Springs (M.E. Trudgen 5368).

The new species is actually much more similar to the south-western Australian endemic genus *Babingtonia* Lindl. than to the more widespread *Baeckea* L. *s. str.* In a recent revision of *Babingtonia*, I noted that the circumscription of the genus might need to be expanded to include *Baeckea* sp. Three Springs (Rye 2015: 227), which is distinctive in having united stamens with a more prominent connective gland. Subsequent DNA analysis has indicated that it is well-supported as sister to *Babingtonia s. str.* on the basis of ETS sequences (M. Barrett pers. comm.), and hence it is described under that generic name.

Babingtonia peteriana Rye, *sp. nov.*

Type: Three Springs, Western Australia [precise locality withheld for conservation reasons], 16 October 2019, *B.L Rye, J.A Wege & K.A. Shepherd* BLR 290203 (*holo*: PERTH 09086242; *iso*: CANB, K, MEL, NSW).

Baeckea moschata C.A.Gardner ms in G. Paczkowska & A.R. Chapman, *West. Austral. Fl.: Descr. Cat.* p. 347 (2000); Western Australian Herbarium, in *FloraBase*, https://florabase.dpaw.wa.gov.au/ [accessed 22 January 2019].

Baeckea sp. Three Springs (M.E. Trudgen 5368) in G. Paczkowska & A.R. Chapman, *West. Austral. Fl.: Descr. Cat.* p. 348 (2000); Western Australian Herbarium, in *FloraBase*, https://florabase.dpaw.wa.gov.au/ [accessed 22 January 2019].

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Low-growing to almost prostrate *shrub* 0.1–0.75 m high, commonly 0.8–1.5 m wide, with densely clustered leaves on short lateral branchlets; flowering stems with 2–7 consecutive flower-bearing nodes. *Young stems* densely papillose-warty, often bright red at first, becoming grey, the outer layer eventually splitting and shed in strips; longest papillae 0.4–0.6 mm long. *Petioles* appressed or closely antrorse below a more spreading blade, 0.2–0.5 mm long. *Leaf blades* linear in outline, 4–7 mm long, 0.3–0.5 mm wide, 0.3–0.4 mm thick, ciliate or laciniate at first, the cilia 0.1–0.3 mm long; apex usually acute and with a small mucron 0.1–0.2 mm long; abaxial surface deeply convex with top flattened and narrowly grooved along the middle, with 1 main row of 4–9 small oil glands on each side of the midvein (glands sometimes inconspicuous); adaxial surface flat or shallowly concave. *Peduncles* 0.6–2 mm long, 1(2)-flowered, warty. *Bracteoles* persistent, ± ovate, 2.2–4 mm long, with a slightly thickened herbaceous centre and broad scarious edges that are deeply laciniate, up to 4 mm wide including the long lacinae, acute and with an apical point 1–1.6 mm long. *Pedicels* 0.4–1.2 mm long. *Flowers* 10–16 mm diam. *Hypanthium* ± hemispheric, 2–2.5 mm long, *c.* 4 mm wide, densely covered by irregular projections, the longer ones 1.5–2 mm long (shorter than the sepal horns); free portion hidden by the projections and connate stamens until the fruiting stage. *Sepals* 2.5–3 mm long including a prominent horn, with a herbaceous keel bearing long projections, the remainder scarious; scarious part ± very broadly ovate, 1.4–2.3 mm long, 3–3.5 mm wide, deep pink to red-purple or streaked with red-purple, green and white; horn wing-like (bilaterally compressed), 2–2.5 mm long, laciniate along its outer margin. *Petals* obovate with a short claw, 3.5–6 mm long, white to almost medium pink, usually very pale pink with a medium to deep pink base, crenate or crenulate. *Stamens* (16–)18–30, united into 5 antipetalous groups of 3–6 in a continuous ring that is often slit deeply or somewhat scooped opposite some of the sepals. *Longest filaments* 1.5–2 mm long, united for *c.* 1/2 or more than 1/2 their length to adjacent stamens, pale pink; free part 0.4–0.6 mm long. *Anthers c.* 0.6 mm long, *c.* 0.45 mm wide, dehiscent by 2 pores; thecae *c.* 0.45 mm long, yellowish; visible (protruding) part of connective gland *c.* 0.3 mm long, maroon; pollen pale yellow. *Ovary* largely inferior, 3-locular; summit raised at the centre; placentas broadly elliptic to circular, distinctly stalked; ovules 9–15 per loculus. *Style* 3–3.5 mm long, deeply inset, the base immersed in a central depression that engulfs *c.* 2/3 of the style in fruit; stigma no broader than the style below, 0.25–0.3 mm diam. *Fruits c.* 1/2 inferior, *c.* 2.5 mm long, *c.* 4 mm diam. (*c.* 7 mm diam. including the attached floral parts), appearing densely bristly; summit with 3 convex lobes. *Seeds* facetted, 1.2–1.4 mm long, 0.7–0.9 mm wide, 0.65–0.75 mm thick; testa hard, medium brown, shiny, minutely colliculate on the outer and lateral surfaces; hilum pale brown, almost circular, 0.25–0.3 mm long. *Chaff pieces* facetted, mostly 0.6–1.2 mm long, crustaceous, medium to dark brown. (Figure 1)

Diagnostic features. Distinguished from other species of *Babingtonia* by its connate stamens, the long projections on its hypanthium and its long-horned sepals.

Selected specimens examined. WESTERN AUSTRALIA: [localities withheld for conservation reasons] 12 Aug. 2008, *J. Borger* RLM 128-8 (PERTH); 19 Sep. 1977, *C. Chapman s.n.* (PERTH); Oct. 1952, *C.A. Gardner s.n.* (PERTH); 15 Dec. 1964, *F.W. Humphreys s.n.* (PERTH); 21 Nov. 2003, *R. Meissner* NA_R335 (PERTH); 2 Oct. 1996, *S.J. Patrick* 2823 (AD, BRI, PERTH); 10 Aug. 2018, *B.L. & P.J. Rye, R.J. Powell & J. Emberson* BLR 290169 (PERTH); 21 Oct. 1986, *M.E. Trudgen* 5368 (AD, BRI, PERTH).

Distribution and habitat. Known from west of Morawa and south-west of Three Springs in the far north of the Avon Wheatbelt bioregion, commonly growing where lateritic rocks or gravel are present. At the northern locality, *B. peteriana* and *Malleostemon decipiens* are among the dominant species on an exposed lateritic sandstone slope with a shrub layer only *c.* 0.5 m high. In the southern area, Powderbark

Figure 1. *Babingtonia peteriana* at the type locality. A – flowering branch; B – top view of flower showing anthers closely surrounding the style; C – undersurface of two flowers, with numerous projections on the hypanthium and sepals, also showing the papillose stem; D – habitat, showing Paperbark Wandoo and numerous low, spreading shrubs of *B. peteriana*. Images taken by Rob Davis (A, B) and Juliet Wege (C, D).

Wandoo (*Eucalyptus accedens*) is the dominant species (Figure 1D) and there are sometimes also tall shrubs to small trees from the genera *Acacia*, *Melaleuca*, *Santalum* and *Allocasuarina*.

Phenology. Flowers have been recorded from August to January but mainly from September to November. Mature fruits have been recorded in December.

Conservation status. Listed by Smith and Jones (2018) as Priority Two under Conservation Codes for Western Australian Flora, under the name *Baeckea* sp. Three Springs (M.E. Trudgen 5368). Recorded from one nature reserve, where there is a very large population, road verges and private land.

Etymology. Named after my husband Peter James Rye (1950–) in appreciation of all the support he has given me over my career, particularly in computing and as driver and photographer on field trips. He took images of this new *Babingtonia* species in bud in August 2018 when we collected material for DNA analysis.

Vernacular name. Ornate Babingtonia. The complex projections from the hypanthium and base of the sepals combined with the incised to laciniate margins of the sepals give the undersurface of the flowers a very decorative, frilly appearance (Figure 1C), which combined with the deep pink-purple, green and white colours are reminiscent of the decorations on many depictions of dragons. The label on *S. Patrick* 2823 described the base of the flowers as being 'mossy with green curly hairs'.

Chromosome number. *2n* = 22 (Rye 1979: 571) as *Baeckea* sp. 4 (sect. *Babingtonia*). Voucher: *M.E. Trudgen* 2201.

Affinities. With its connate stamens and long protrusions on the hypanthium, *B. peteriana* could not be confused with any other species of *Babingtonia*, yet it is still typical of the genus in many respects, such as in its low growth habit, narrow, thickened leaves and flattened stamen filaments. It has more extreme versions of certain characters known in the genus, such as its more prominently horned sepals and markedly papillose-warty stems (Figure 1C). It is closest in anther morphology to *B. cherticola* Rye & Trudgen but has a more conspicuous connective gland. The following couplet could be added to the start of the key given in Rye (2015) to accommodate the new species.

a. Hypanthium and sepals with projections up to *c.* 2.5 mm long. Stamens connate for *c.* 1/2 or most of their length (Morawa area–Three Springs area)..... **B. peteriana**

a: Hypanthium and sepals relatively smooth. Stamens free

Notes. When its type locality was visited in October 2019, *B. peteriana* was the only species observed in flower. The flowers had copious nectar on the surface of the ovary summit surrounding the style, and were attended by many kinds of flies and bees. Nectar is only accessible to these insects if they insert their mouth parts through the small gap between the style and the anthers, which closely surround the stigma (Figure 1B).

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taking numerous images, with additional detailed images taken later by Rob Davis. This research was supported by a Science Project Support Grant from Biodiversity and Conservation Science (DBCA).

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